Claims

1. *(Currently amended)* A seed layer structure for a hard magnetic material for providing longitudinal biasing to a ferromagnetic layer in a magnetic sensor, the seed layer structure being formed on a substrate and comprising:

a) ~~at least~~ a first underlayer and a second underlayer located above said first underlayer, each of said first and second underlayers being selected from the group consisting of Cr, Cr_xMo_{1-x}, Cr_xMn_{1-x}, $CrxTi_{1-x}$ and Cr_xV_{1-x};

b) ~~at least~~ a first interlayer located between said first underlayer and said second underlayer, said interlayer being an oxide selected from the group consisting of oxides of aluminum, oxides of tantalum, oxides of silicon and oxides of hafnium; and

c) a hard magnetic material located above said second underlayer.

2. *(Currently amended)* The seed layer structure in claim 1 further comprising a third underlayer selected from the group consisting of Cr, Cr_xMo_{1-x}, Cr_xMn_{1-x}, $CrxTi_{1-x}$ and Cr_xV_{1-x} and a second interlayer being an oxide selected from the group consisting of oxides of aluminum, oxides of tantalum, oxides of silicon and oxides of hafnium; said third underlayer and said second interlayer each located above said second underlayer and below said hard magnetic material, wherein said second interlayer is located between said second underlayer and said third underlayer.

3. *(Canceled)*

4. *(Currently amended)* The seed layer structure in claim 1 further comprising a plurality of alternating underlayers and interlayers each located above said second underlayer and below said hard magnetic material, each of said underlayers selected from the group consisting of Cr, Cr_xMo_{1-x}, Cr_xMn_{1-x}, $CrxTi_{1-x}$ and Cr_xV_{1-x} and each of said interlayers being an oxide selected from the group consisting of oxides of aluminum, oxides of tantalum, oxides of silicon and oxides of hafnium.

5. *(Canceled)*

6. *(Canceled)*

7. *(Canceled)*

8. *(Canceled)*

9. *(Currently amended)* The seed layer structure in claim 1 wherein the thickness of said first underlayer and the thickness of said second underlayer are each ~~substantially~~ greater than 3 nm.

10. *(Currently amended)* The seed layer structure in claim 1 wherein the thickness of said first interlayer is ~~substantially~~ between 0.1 nm and 10 nm.

11. *(Canceled)*

12. *(Currently amended)* The seed layer structure in claim ~~11~~ 1 wherein the ~~said~~ magnetic sensor is a giant magnetoresistive sensor.

13. *(Currently amended)* The seed layer structure in claim ~~11~~ 1 wherein the ~~said~~ magnetic sensor is a tunnel valve sensor.

14. *(Currently amended)* The seed layer structure in claim ~~11~~ 1 wherein the ~~said~~ magnetic sensor is an anisotropic magnetoresistive sensor.

15. *(Currently amended)* The seed layer structure in claim ~~11~~ 1 wherein the ~~said~~ magnetic sensor is selected from the group consisting of top spin valve sensors, bottom spin valve sensors, giant magnetoresistive sensors, tunnel valve sensors and anisotropic magnetoresistive sensors.